in this application is not a mere obvious variation of the claimed subject matter in any of the other applications.

The factual analysis set forth in MPEP 804 for an obviousness double patenting rejection is not set forth in the rejection. Accordingly, the grounds for the rejection are not apparent from the Action. The rejection should not be maintained without a clear statement as to its grounds.

The claims of this application do not recite subject matter that is merely an obvious variation of the subject matter recited in the claims of applications cited in this rejection. Attached as Appendix A is a chart comparing claim 1 of this application to claim 1 of the other applications. Appendix A compares claim 1 from each of the applications.[1] The bottom row of Appendix A identifies some of the features recited in claim 1 of this application that are not recited in the corresponding claim 1 of the other applications. One of the differences is that claim 1 of this application requires the housing to wrap around the coil at attach to an end of a tension rod. This feature is not suggested in any of the other claims. It would not have been obvious to modify the claimed subject matter of the other applications to conform to the claimed subject matter in this application. Accordingly, the obviousness double patenting rejection should be withdrawn.

[1] If this rejection is based on a comparison of claims other than claim 1, then a claim chart comparing claims in the next action would be appreciated.

The rejection of claims 1-4, 10-18, 20, 21 and 23 as being obvious over Shervington et al (U.S. Patent No. 5,166,569 - Shervington) in view of Sterret et al (U.S. Patent No. 4,184,089 - Sterret) is traversed.

Several of the claims have been amended to make more stark the differences between the present invention of a housing and tension assembly for a superconducting winding that are thermally isolated from a hot rotor core and the applied references. The various claims as amended recite thermal isolation by a vacuum region between the tension rod and rotor core, and between the coil housing and rotor core.

Shervington does not disclose a superconducting coil mounted on a rotor core. Shervington does disclose a high-temperature coil in direct contact with a hot the rotor core. As shown in Figure 4 of Shervington, the coil winding is bolted directly against the hot rotor core such that heat from the rotor core flows directly to the coil and vice versa. It would not have been an obvious modification of Shervington to convert the hot coil winding to a superconducting coil winding that is cryogenically cooled.

Contrary to the action, Shervington does not teach leaving a gap between a conduit through the rotor core and a bolt extending through the conduit. The purported gap between the bolt and core may be more a drawing artifact in Figure 4, than indicative of thermal isolation between the bolt and the core. To make the difference between the rotor and coil assembly of the present invention and that of Shervington, the claims have been amended to state that the coil, housing and tension bar are thermally isolated from the core and/or the tension rod is separated from the core by a vacuum region (which also provides thermal isolation).

Contrary to the Action, there is no suggestion or motivation evident from the prior art to apply Sterrett to convert Shervington into a superconducting rotor. Sterrett discloses a technique for mounting a superconducting coil winding 64 within a rotor cylinder 13. The coil winding 64 is assembled in a tube structure 19 that is supported by spokes 23 that extend between the ring and an opposite side of the rotor cylinder. Sterrett certainly does not suggest that the hot rotor and coil arrangement shown in Shervington be modified by simply substituting a superconducting coil for the hot coil winding shown in Sterrett.

Claims 5-6, 9 and 25 to 27 are not obvious over Shervington in view of Sterrett and further in view of Laskaris ‘333 (U.S. Patent No. 3,991,333) for substantially the same reasons as stated above. Further, Laskaris '333 does not disclose a hollow pin for a tension rod extending between coils such that the ends of the tension rod are proximate to opposite sides of the coil. In Laskaris '333, a cross bolt extends perpendicularly through the plane formed by the coil. The cross bolt holds a stacked assembly of rotor plates and coil winding assemblies together. While the cross bolt is in a sleeve (30) that extends through the rotor core, the sleeve is not a dowel or pin that couples an end of a tension rod to a housing wrapped around a coil winding. Laskaris '333 teaches away from orienting a tension rod such that its ends are proximate to the sides of the coil to provide coil support. There has been no showing as to how it would have been obvious to apply Laskaris ‘333 to modify the bolt, wedges and coil assembly shown in Shervington, even in view of Sterrett

All claims are in good condition for allowance. If any small matter remains outstanding, the Examiner is requested to telephone applicants' attorney. Prompt reconsideration and allowance of this application is requested.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: Jeff Nelson
Jeffry H. Nelson
Reg. No. 30,481

JHN:glf1100 North Glebe Road, 8th Floor
Arlington, VA 22201-4714
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

APPENDIX: COMPARISON OF CLAIM 1 OF APPLICATION TO CLAIM 1 OF RELATED APPLICATION. SOME DIFFERENCES IN CLAIMS HIGHLIGHTED.

Current (09/855,026)	09/854,939 (Allowed)	09/854,938 (Allowed)	09/854,932	09/854,933 (Allowed)	09/854,946 (Allowed)
1.In a synchronous machine, a rotor comprising: a rotor core; a super-conducting coil winding extending around at least a portion of the rotor core, said coil winding having a pair of side sections on opposite sides of said rotor core, and **wherein said side sections are radially outward and separated from the rotor core by a gap;** at least one tension rod extending between the pair of side sections of the coil winding and through said rotor, wherein a first end of the tension rod is proximate a first side section of the coil winding and a second end of the tension rod is proximate an opposite side section of the coil winding, and **wherein the tension rod is separated by a vacuum region from the rotor core;** a coil housing at each of opposite ends of said tension rod, **wherein said housing wraps around said coil winding and is attached to said tension rod and said housing is wherein the coil winding, at least one tension rod and coil housing are thermally isolated from the rotor core.**	1. A rotor for a synchronous machine comprising a cylindrical magnetic solid rotor core having at least one conduit extending through the core and parallel to a core axis; a race-track super-conducting coil windingextending around the rotor core, wherein said coil winding is in a plane of the at least one conduit; a coil support extending through the at least one conduit of the core and attaching to opposite long sides of the coil winding, **wherein a gap is between said coil support and said conduit such that the coil support is thermally isolated from said conduit**, and **a pair of end shafts extending axially from said core and attached to the core.**	1.In a synchronous machine, a rotor comprising: a rotor core; **rotor collars on opposite ends of the rotor core and axially aligned with the rotor core,** wherein the rotor collars each have a slot adjacent an end of the rotor core and said slot receiving an end section of a super-conducting coil windings said super-conducting coil winding extending around at least a portion of the rotor core, said coil winding having a pair of coil side sectionson opposite sides of said rotor core and a pair of coil end sections extending in said slot of each of said collars; **a conductive shield around the rotor core and covering said coil winding, wherein said conductive shield extends over each of said collars and the shield is attached to the collars.**	1 A rotor for a synchronous machine comprising: a warm rotor core having a rotor axis; **a pair of cryogenically cold super-conducting coil windings** mounted on the rotor core, **each of said coil windings in a respective plane that is parallel to and offset from the rotor axis,** and each of said coil windings having an end section extending beyond an end of the rotor core, and **a cryogenically cold coil support attached the pair of cryogenically cold coil windings to form an assembly of the coil support and coil windings, and said assembly being separated from said rotor core by a gap.**	1. In a synchronous machine, a rotor comprising: a rotor core having an axis and a conduit extending through the core and perpendicular to the axis, wherein the conduit has openings on opposite sides of the core; a super-conducting coil winding extending around at least a portion of the rotor, said coil winding having a side section adjacent each of the opposite sides of the rotor core; at least one tension rod extending through the conduit in said rotor core, wherein said rod extends through the openings on the opposite sides of the core and opposite ends of the rod are each adjacent a side section of the coil winding; and a housing attached to each of the opposite ends of the tension rod and connected to the side section of the coil winding, **wherein the housing comprises a pair of side panels.**	1. In a synchronous machine, a rotor comprising: a rotor core having an axis; a super-conducting coil winding extending around at least a portion of the rotor, said coil winding having a side section adjacent a side of the rotor core; at least one tension rod extending through a conduit in said rotor core, wherein the tension rod and conduit extend from the side section of the coil winding to an opposite side section of the coil winding, and said rod is perpendicular to the axis of the rotor core; **at least one tension bolt extending between an end of the tension rod and said side section, and** **a housing attached to the tension bolt** and connected to the side section of the coil winding.
	Does not recite tension rods or a coil housing.	Does not recite tension rods or a coil housing.	Does not recite tension rods or a coil housing.	Does not recite a housing wrapped around the coil.	Does not recite a housing wrapped around the coil.